one-thousandth of an inch in a year would account for the difference. In stellar parallax we find the important work of Gill and Elkin at the Cape of Good Hope, and the surprising results of the Pulkowa observations, which, if confirmed, will place the star Aldebaran among the three or four nearest of the fixed stars. Professor Newcomb mentions the spectroscopic investigations of the motions of stars in the line of sight, observations of the companion of Sirius, cataloguing stars by photography, and the red sunsets, and concludes with a review of the conclusions of the International meridian conference, and a notice in regard to the communication of astronomical discoveries, and the recently founded Watson and Draper astronomical prizes.

WATER-SUPPLY FOR NEW YORK.

MR. J. T. FANNING, who is well and favorably known to the profession by his valuable treatise on water-supply engineering, prefaces a study of the present and future water-supply of New York [1] by a couple of pages, giving a brief historical summary of the establishment of the Croton aqueduct, which at its opening in 1842 supplied the city, then having a population of less than one-third of a million, with an average of twelve million gallons of water daily. The history of the rapid increase in the consumption of water, next given, shows that by 1875 the demand for water had reached the limiting capacity of the aqueduct, which amounted to a daily average of ninety-five million gallons. Since 1875 "the public fountains have ceased, one after another, to flow. Drinking-fountains for either man or beast have been almost unknown of late in the public streets. Meters have been applied in charitable institutions, as well as in manufacturing establishments, and the most stringent measures taken to prevent waste, and at times most urgent appeals made to save the consumption, that the evils of an approaching water famine might be lessened." The New-York water department estimates that the works now in progress will draw from the Croton watershed a daily average of two hundred and fifty million gallons (see *Science*, No. 124).

On the basis of numerous statistical tables given in the report, as to increase of population and of water-consumption, the attempt is made to estimate the period during which these new works will provide a sufficient supply for the city, and for the population which must draw its water from the city supply.

In making this estimate, the needs of the city are taken to include a sufficient supply for the ordinary uses to which water is applied in our larger cities, not excluding those uses in manufacturing establishments for the lack of which business must be curtailed, or settle elsewhere.

The conclusion reached in this report is, that, before the year 1898, the regular increase of population and the expansion of business will require the whole of the projected average supply of two hundred and fifty million gallons *per diem*, and that before 1930 four times that amount may be needed.

Having thus determined that the total available supply from the Croton watershed cannot in any event answer probable legitimate demands for much more than a single decade, the author, in looking to other gathering-grounds from which to draw a sufficient supply for future needs, regards the head waters of the Hudson River in the Adirondack region as the most available source, provided the city is to be supplied by gravitation with water of unexceptionable quality, in adequate quantities, and at a pressure due to a head of two hundred feet or more above tide water, such as will carry water to the upper floors throughout the city.

Careful surveys show that a canal sixty feet wide, thirteen feet deep, and somewhat over two hundred miles long, would carry five hundred million gallons of water *per diem* from near Fort Edward to New York. The estimated cost of this conduit is nearly thirty million dollars; and the auxiliary structures, storage-basins, necessary tunnelling, etc., twenty-five million dollars: total, fifty-five million dollars. It is proposed that the canal run on the highlands east of the Hudson River at an initial elevation of three hundred and fifty feet above tide water, and that this source be also used as the water-supply for the cities and towns on both sides of the river, between Albany and New York, having, according to the census of 1880, an aggregate population of quarter of a million souls, besides the million and three-quarters in New York and Brooklyn. Detailed surveys and the statistics of annual rainfall show that the Adirondack watershed is capable of furnishing an average of nearly fourteen hundred million gallons daily without trespassing upon the river-supply available for canal and manufacturing interests.

This grand and beneficent project must evidently, before many years, be put in process of actual construction. It is greatly to be desired that the state of New York should, as soon as may be, put a stop to the destruction of the Adirondack forests, and reserve a principal part of that region for a park, thus preserving this region as a sanitarium for the commonwealth, as well as the source of a beautiful supply of good healthful water for the entire Hudson valley.

[1] *Report No. 2, on a water-supply for New York and other cities of the Hudson valley.* By J. T. FANNING, C.E. New York, 1884. 36 p., 3 maps. 8°.

COMPARISON OF THE SKULLS OF ASSASSINS AND MEN OF NOTE.

THE material for Dr. N. Bajenoff's studies of the heads of assassins and distinguished persons (*Bull. soc. anthrop. de Paris*) was of two kinds, — first, fifty-five heads of assassins; second, nineteen heads of distinguished persons. This last series seeming too small, he prepared another, composed of the heads of twenty-five noted living men. His main studies were carried on by means of the cephalometer of Anthelme,